

What is Claimed:

1. A flexible wiring board comprising:

an insulating film having at least one principal surface;

a printed conductive circuit layer formed at specified areas on said at least one principal surface of said insulating film,

a metallic layer formed on said printed conductive circuit layer, said metallic layer having lands, and

an insulating layer formed on said metallic layer, said insulating layer having openings exposing the lands.

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2. A flexible wiring board comprising:

an insulating film having at least one principal surface;

a principal conductive circuit layer formed at specified areas on said at least one principal surface of said insulating film,

a metallic layer formed on the printed conductive circuit layer, said metallic layer having lands;

an insulating layer formed on said metallic layer said insulating having openings exposing said lands, and

a copper laminated polyimide board disposed in connection with said lands for soldering.

3. A flexible wiring board comprising:

an insulating surface having at least one principal surface;

a printed conductive circuit layer formed at specified areas on said at least one principal surface of said insulating film

a first insulating layer formed on at least the bent area of said insulating film covered by said printed conductive circuit layer,

a metallic layer formed on said printed conductive circuit layer, and

a second insulating layer formed on specified areas of said metallic layer.

4. A flexible wiring board comprising:

an insulating film having at least one principal surface, said insulating film having at least one bent area forming a cavity;

a printed conductive circuit layer formed at specified areas on said at least one principal surface of said insulating film,

a metallic layer formed on said printed conductive circuit layer, said metallic layer having one or more connecting terminals,

an insulating layer formed on said metallic layer, said insulating layer having openings exposing said connecting terminals, and

a reinforcement plate disposed in said cavity formed by said insulating film.

5. The flexible wiring board according to Claim 4, wherein said reinforcement plate is formed of a solderable material.

6. A flexible wiring board comprising:

an insulating film having at least one principal surface

a conductive layer formed at specified areas on said at least one principal surface of said insulating film for shielding;

a first insulating layer formed on said conductive layer,

a printed conductive circuit layer formed on said first insulating layer,

a metallic layer formed at specified areas on said printed conductive circuit layer, and

a second insulating layer formed on at least said metallic layer.

7. A flexible wiring board comprising;

an insulating film having a first and a second principal surface;

a printed conductive circuit layer formed at specified places on said first principal surface of said insulating film,

a metallic layer formed on said printed conductive circuit layer,

an insulating layer formed on specified areas on said metallic layer, and

a conductive layer formed on said second principal surface.

8. A flexible wiring board comprising:

an insulating film having at least one principal surface;

a printed conductive circuit layer formed at specified places on said at least one principal surface of said insulating film,

a metallic layer formed on said printed conductive circuit layer,

a first insulating layer formed at specified places on said insulating film and said metallic layer,

a conductive layer formed on said first insulating layer for shielding, and

a second insulating layer formed on said conductive layer.

9. A flexible wiring board according to claim 1, further comprising:

a second printed conductive circuit layer formed at specified places on a second principal surface of said insulating film,

a second metallic layer formed on said printed conductive circuit layer, and

a second insulating layer formed at specified places on said metallic layer.

10. The flexible wiring board according to Claims 1, 3, 6, 7 or 8, further comprising a reinforcement layer disposed on one of said principal surfaces of the insulating film.

11. The flexible wiring board according to Claims 1, 2, 3, 6, 7 or 8, further comprising a printed conductive circuit layer formed on said insulating layer.

12. The flexible wiring board according to Claims 1, 2, 3, 6, 7 or 8, further comprising a soft reinforcement layer disposed on the a second principal surface of the insulating film.

13. The flexible wiring board according to Claims 1, 2, 3, 6, 7 or 8, further comprising a soft reinforcement layer, attached to a hard reinforcement layer, said soft reinforcement layer and said hard reinforcement layer disposed on a second principal surface of said insulating film.

~~13~~ <sup>10</sup> 14. A flexible wiring board having:

an insulating film having at least one principal surface;

a conductive circuit layer formed at specified areas on said at least one principal surface;

an insulating layer formed on said conductive circuit layer; and

an adhesive material layer disposed at specified areas on said insulating film, said conductive circuit layer and said insulating layer.

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15. The flexible wiring board according to Claim 14, wherein a mold release material layer is disposed on said adhesive material layer.

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16. A flexible wiring board comprising:  
an insulating film having at least one principal surface;

a first printed conductive circuit layer formed at specified areas on said at least one principal surface of said insulating film,

a first metallic layer formed on said first printed conductive circuit layer, said metallic layer having through-hole lands and external connecting terminals;

an insulating layer formed on said insulating film and on said first metallic layer, said insulating layer having holes exposing said through-hole lands and exposing said external connecting terminals;

a second printed conductive circuit layer formed on said insulating layer in connection with said through-hole lands, and



a second metallic layer formed on said second printed conductive circuit layer.

17. The flexible wiring board according to Claim 16, which comprises:

a second insulating layer formed on said insulating layer and on said the second metallic layer, said second insulating layer having openings exposing said through-hole lands and said external connecting terminals,

a third printed conductive circuit layer formed on said second insulating layer in connection with said through-hole lands, and

a third metallic layer formed on said third printed conductive circuit layer.

18. A fabrication method for wiring boards comprising:

forming a printed conductive circuit layer on an insulating film,

forming a metallic layer on said printed conductive circuit layer by plating, and

forming an insulating layer at specified areas on said insulating film and on said metallic layer.

19. A fabrication method for flexible wiring board according to Claim 18, wherein the insulating layer is formed by a printing method using an insulating paste.

20. A fabrication method for flexible wiring boards comprising the steps of:

screen printing a specified wiring pattern on an insulating film using a conductive paste;

forming a printed conductive circuit layer by baking said wiring pattern;

forming a metallic layer on said printed conductive circuit layer by plating; and

forming an insulating layer at specified areas on said insulating film and on said metallic layer.

21. A fabrication method for flexible wiring boards comprising the steps of:

screen printing a specified wiring pattern on an insulating film using a conductive paste;

forming a first printed conductive circuit layer by baking said wiring pattern;

forming a first metallic layer having through-hole lands and external connection terminals on said first printed conductive circuit layer by plating;

forming an insulating layer on said first metallic layer so that said through-hole lands are exposed;

forming a second printed conductive circuit layer on said insulating layer in connection with said through-hole lands on said first metallic layer; and

plating a second metallic layer on said second printed conductive circuit layer.

22. A fabrication method for flexible wiring boards comprising the steps of:

screen printing a specified wiring pattern on an insulating film using a conductive paste;

forming a printed conductive circuit layer by baking said wiring pattern;

forming a conductive circuit layer by the steps of:

(a) boring through-holes at specified places on said insulating film where said conductive circuit layer is disposed, said through-holes having surfaces,

(b) coating a conductive paste on said surfaces of said through-holes, and

(c) baking said conductive paste;

forming a metallic layer on said conductive circuit layer and on said printed conductive circuit layer by plating said; and

forming an insulating layer at specified areas on said insulating film and on said metallic layer.

23. A fabrication method for flexible wiring boards comprising the steps of:

screen printing a specified wiring pattern on a first principal surface of an insulating film using a conductive paste;

forming a first printed conductive circuit layer by baking said wiring pattern;

screen printing a second specified wiring pattern on a second principal surface of said insulating film using a conductive paste;

forming a second printed conductive circuit layer by baking said second wiring pattern;

forming a conductive circuit layer by

(a) boring through-holes at specified areas on said insulating film where said first and second conductive circuit layers are disposed, said through-holes having a surface;

(b) coating a conductive paste on said surface of said through-holes, and

(c) baking said conductive paste;

forming a metallic layer on said conductive layer and said first and second printed conductive circuit layers by plating; and

forming an insulating layer at specified areas on said insulating film and said metallic layer.

24. A fabrication method for flexible wiring boards comprising the steps of:

boring through-holes at specified areas on an insulating film, said through-holes having surfaces;

screen printing a specified pattern on said insulating film and on surfaces of said through-holes using a conductive paste;

forming a printed conductive circuit layer by baking said pattern;

forming a metallic layer on said printed conductive circuit layer by plating; and

forming an insulating layer at specified areas on said insulating film and metallic layer.

25. A fabrication method for flexible wiring boards comprising the steps of:

boring through-holes at specified areas on an insulating film;

screen printing a specified pattern on a first and a second surface of said insulating film and on surfaces of said through-holes using a conductive paste;

forming a printed conductive circuit layer by baking said pattern;

forming a metallic layer on said printed conductive circuit layer by plating; and

forming an insulating layer at specified areas on said insulating film and on said metallic layer.

26. A fabrication method for a flexible wiring board having an insulating film with at least one surface, a conductive circuit layer formed at specified areas on said one surface of said insulating film and an insulating layer formed on said conductive circuit by screen printing, comprising the steps of:

coating an adhesive material layer at specified areas on the flexible wiring board, by screen printing; and

screen printing a mold release material layer at specified areas on the flexible wiring board.

27. The fabrication method for flexible wiring boards according to Claims 20, 21, or 22, wherein the insulating layer is formed by screen printing using a conductive paste, and baking said coated conductive paste.

28. The fabrication method for flexible wiring boards according to claims 20, 21 or 22, wherein the

insulating layer is formed by laminating an insulating material by adhesion on said flexible wiring board.

29. A fabrication method for flexible wiring boards according to Claim 18, wherein the insulating layer is formed by a laminating method using insulating materials.